MAY 1959 2s. 3d.

Personnel Management and Methods

WELFARE

SAFETY

HEALTH

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TAKING THE GUESSWORK OUT OF ACCIDENT PREVENTION 15

TRIM OUR TRAINING PLANS? CERTAINLY NOT! 18

GUIDEBOOK TO SAFER WORKING 28

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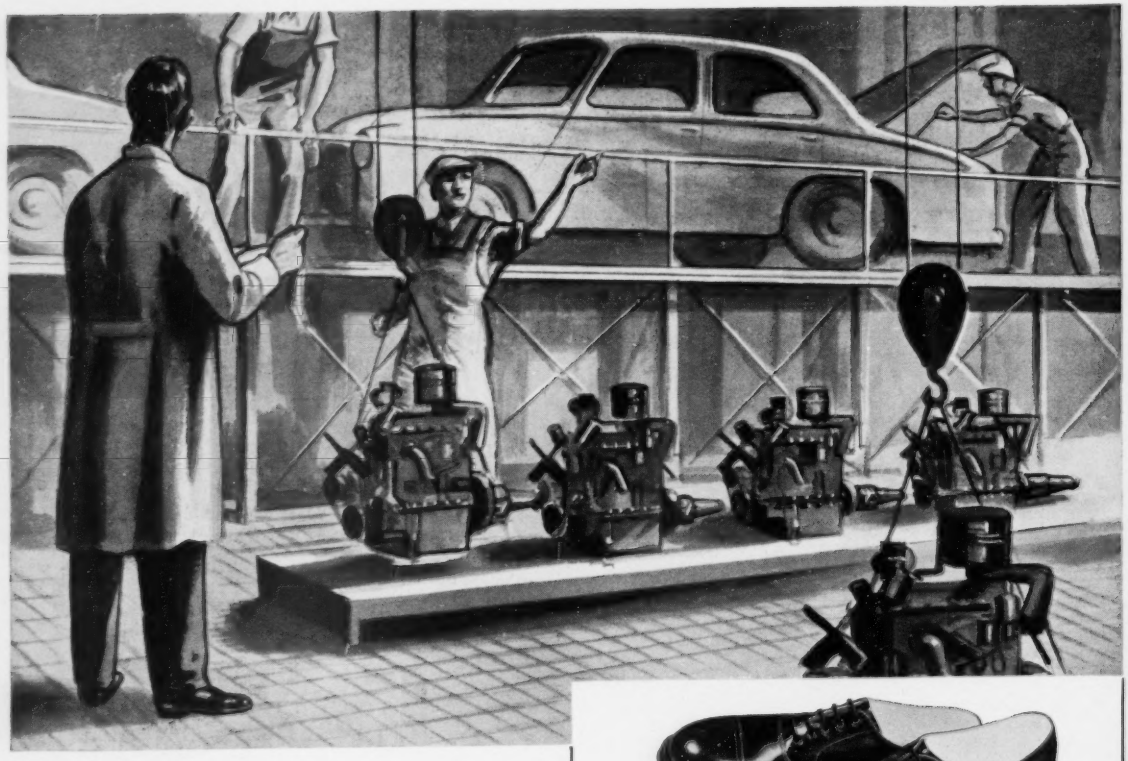

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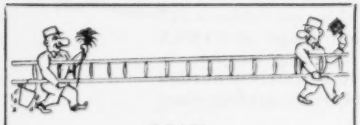

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Personnel Management and Methods

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MAY, 1959

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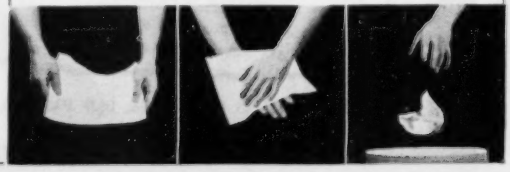

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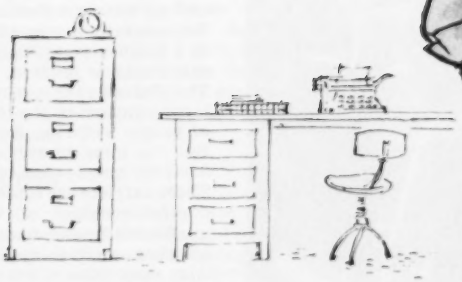

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The Poliomyelitis virus is found in large numbers in the intestinal tracts of people suffering from the disease. But "*a large proportion of the virus hosts are symptomless carriers*".*

These carriers are often quite unaware of the presence of the virus and unaffected by the disease themselves; but they can unwittingly infect others who may then develop the disease. Flies and bluebottles are, of course, also distributors of Polio virus and dangerous germs in general.

You can help considerably by insisting on high standards of hygiene in your Offices and Factories. The washing of hands before meals and after going to the toilet is *most important*. And constant war should be waged on flies.

As shown by the World Health Organisation's Technical Report, oxidising agents are the most effective chemical disinfectants against the Polio virus. *Domestos is an extremely powerful oxidising agent.*

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* "Topical Aspects of Poliomyelitis" "Journal of the Royal Society of Health" Dec. 1956

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NEWS NAMES NOTES

Psychological Services

HOW CAN the National Institute of Industrial Psychology help you in your job? The Institute's annual report gives some interesting examples. During the year, advice was given to thirty-one firms, and 140 individuals were tested and interviewed. Staff assessment schemes were introduced in two companies—in one case for managerial staff. Industrial investigations included attitude surveys in engineering firms, building sites, a carpet factory and chain stores. Personnel selection: the Institute gave advice on the selection of individuals, including the interviewing of short-list candidates for posts.

Steel Spokesmen

OPPORTUNITY for self-expression was given to 110 apprentices and junior operatives from branches of The United Steel Companies Ltd., at the group's fifth annual week-end residential conference at Downing College, Cambridge, last month. Five times during the week-end, ten-member discussion groups talked over the matters arising from the conference papers. Average age of the delegates was between 20 and 21, all from South Yorkshire, Lincolnshire and Cumberland.

Pre-digestion for Computers

HOW TO REDUCE TIME spent on working out instructions for "electronic brains" — this was one of the main matters discussed at the first national conference of computer programming experts held last month at Brighton Technical College. This coincided with the installation of an £8,000 digital computer—Brighton is only the third college in the country to possess one—bought with a £2,000 contribution from local industry, the balance coming from the local authority.

Electronic Table-talk

A STUDY GROUP has been set up by eleven local authorities and four regional hospital boards who are ordering or considering ordering a 555 electronic calculator from International Computors and Tabulators Ltd. Their purpose is to investigate the applications of this equipment to their office systems, to study existing installations and to exchange ideas. The group plans to meet about once a month; first in London, where the calculator is available for demonstration purposes, but later in provincial centres.

SAFETY STRUCTURE—To help building firms prepare their own accident prevention policies the National Federation of Building Trades Employers has prepared a booklet setting out the "principles of basic managerial structure in this field".

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NEWS
NAMES
NOTES

GASMAN'S HOLIDAY—To stimulate interest among public schoolboys who are about to choose a career, the Gas Council showed a party of thirty boys over grid control centres, offices and showrooms in Scotland and the North during the Easter holidays.

LONG-TERM BENEFITS—£5 a week will be paid to Rolls-Royce employees who are unable to attend work for more than a year through illness or disability. The benefit scheme is open to those who have been with the company for 25 years, and payment will continue until the employee returns to work or reaches retirement age.

Women supervisors on a recent I.W.S. course visited the John Douglas School in London to learn how deportment and grooming might impress others.

HORS-D'ŒUVRES—An introduction to the general principles of management is offered to industrial catering managers at a two-day course (May 5-6) organised by the Industrial Welfare Society. Topics: administration and organisation, interviewing, chairmanship and committee work, resistance to change, leadership and communication.

Former assistant public relations officer of British Celanese in Spondon, **Mr. C. W. Cunnington** has been appointed personnel manager of the B.B. Chemical Company, Leicester.

Mr. C. T. Kitching has been appointed personnel manager of Pirelli Ltd. and not, as reported in our March issue, of Alan Betts Associates Ltd.

Mr. Gerrit Van der Woude has been appointed Director of Personnel of IBM United Kingdom Ltd., in addition to the post of company secretary which he has held since November, 1956.

Former manufacturing supervisor, **Mr. C. Sherwin** of Stanley Works (G.B.) Ltd., Sheffield, has been appointed personnel manager. He succeeds **Mr. R. Rawding** who has retired to settle in Perth, Australia.

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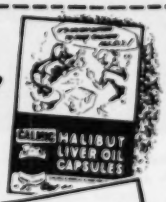

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POINT COUNTER POINT

Readers' Choice

EMPLOYEES of Shell-Mex and B.P. Ltd. have voted local news, the working of the company, appointments, retirements, etc., and sport and social events as by far the most popular items in their house magazine. These preferences were revealed in a survey of some 1,400 readers of *Shell-BP News*, representing the three principal readership categories—employees, employees' families and pensioners.

Readers were least interested in humour and cartoons, photographs (including pictures of personnel) and the magazine's cover. Pensioner readers disagreed slightly with the general consensus. They, understandably, put appointments and retirements at the head of the list, with local news and news of personnel tying for second place. On the other hand, they were not over-curious about long-service records.

The survey was carried out for the company by Research Services Ltd., and was based on personal interviews with employees and their wives, and a postal questionnaire to pensioners. It also showed that about 40 per cent of readers (except pensioners) read all or almost all of each issue. As many as 82 per cent of pensioners read the journal from cover to cover.

A free copy of *Shell-BP News*, is posted each month to the company's 12,000 employees and 3,000 pensioners, and from the survey, management has discovered that seven out of eight copies are read by other people; the average copy has at least three readers.

Commenting upon this general readership at last month's conference of the Institute of Public Relations, Mr. A. C. Durie (the company's general manager—administration) said that it was largely influenced by the fact that the magazine was posted direct to readers' homes. "Naturally", he added, "this is not a cheap distribution method . . . [But] you will find that the cost of home posting will pale into insignificance beside the costs of advertising".

Describing what the company aimed to achieve with its house journal, Mr. Durie continued: "We want to use the magazine to tell our readers about their jobs, about developments which may affect those jobs, about the background to the industry; secondly, we aim to make the magazine help our readers to feel that they belong to the company. Four out of five of our readers appreciate this point. . . . The survey has shown me that we are right in trying not to insult our readers' intelligence. [They] clearly take an adult interest in the activities and fortunes of the company".

Detailed results of the survey, specimen pages of *Shell-BP News*, and Mr. Durie's conference paper have been published as a 44-page booklet by the company.

Sociable Company

WHAT is an employee to do after he has retired from his job? This gnawing problem has been solved (as far as a social life is concerned) for a growing number of elderly men in Gainsborough, Lincolnshire. Their benefactor is the engineering firm which once employed them, Marshall Sons & Co. Ltd. Many of them had worked for the company for 50 or more years, so when they were reluctantly retired some 10 years ago Marshall's management decided to give them what must surely be the most acceptable and practical long-service award ever devised—a Company Veterans' Club where old workmates can meet regularly and chat over a game of dominoes and a cup of tea.

Mr. J. Lawther, the firm's personnel manager, has sketched the history of the club for PM&M.—

"First step was to call all our retired employees together for their opinions. And they were largely responsible for drawing up the constitution. The rules were simple: the main qualification for membership was that a man should have at least 10 years' service and that he should be in the company's employment when he retired.

"The club had very modest beginnings; the firm provided rooms which were easily accessible from the street and furnished with tables, chairs, a billiard table, carpet bowls rink and the usual indoor games like cards, dominoes and table bowls. It is open

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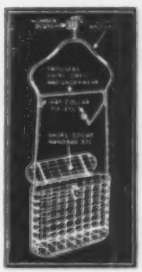

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POINT COUNTER POINT

daily and the Veterans start to arrive soon after one o'clock. Regularly each day up to 80 of them sit down to games organised by their committee.

"In 10 years the club members have built up an attractive annual programme which includes an outing to the sea, a visit to their fellow Veterans at the firm's Leeds factory, a Christmas dinner and a prize draw.

"The company takes little part in the actual running of the club. Members of the management drop in from time to time to meet old employees in a friendly informal atmosphere, but the Veterans elect their own chairman, secretary and treasurer. In the early days Marshall's made them a grant of £130 but the Veterans have a strong sense of independence. For instance, tea is provided free by the company; yet at teatime the club committee puts a collecting box on the table for those who want to pay a copper or two, and this collection is credited to club funds.

"At the club's last annual general meeting the works general manager and I were staggered to learn that, although the Veterans had bought themselves an extra billiard table and paid out prize money for their regular competitions, their funds stood higher than they had done 10 years before".

Other People's Views

SHOW THEM WHO'S BOSS — "Men don't work for impersonal institutions. They want to know who the human being is that runs the show. Who the hell wants to work for the 'North-West Region'?"

Mr. Ernest Marples, the Postmaster-General, speaking at the Institute of Public Relations conference in Brighton.

CARES OF THE WORLD—"Industry has a new role to play in the new world — to take the place in some measure of the wealthy patron of the past, to initiate, to sponsor, to finance research and education, the care of youth and the aged, culture, and, in fact, civilisation".

Sir Hugh Beaver, addressing members of the Federation of British Industries.

Speaking Their Piece

FOREMEN are not kept in the picture, they are not backed up on disciplinary decisions; systems are introduced without their being fully informed or prepared, while managers too often take specialist advice without fully consulting the foreman. This list of supervisory grumbles is discussed in the current issue of *Foreman*, the annual magazine for supervisors, published by the Industrial Welfare Society.

In the opening article, IWS training officer Kenneth Baird, examines the various two-sided causes of friction between foreman and management, and presents a few of the managers' arguments. Examples: foremen take too narrow a view, will not delegate, are unable to state a case plainly, are unwilling to reveal and discuss problems.

Mr. Baird suggests ways in which the foreman can revise his attitude, take the initiative and so contribute more effectively as a member of the management team. The article is too short for a comprehensive analysis of the problems, but it provides a useful starting point for company supervisory courses.

Other features in the current *Foreman* describe the thoughts and aspirations of young workers and school-leavers, explain the organisation of industrial health and works catering, and give a Britisher's view of the German supervisor.

This Month's Cover

A study by Adolf Morath of the thrilling—and hazardous—extravaganza of steelmaking. Operational research (a name that is new to many personnel managers) is helping British steel companies improve their safety planning. For the story of what operational research is and what it is doing in the field of accident prevention, see page 15 —Taking the guesswork out of safety planning.

Picture (taken at Appleby-Frodingham Steel Co., Scunthorpe) courtesy of British Iron & Steel Federation.

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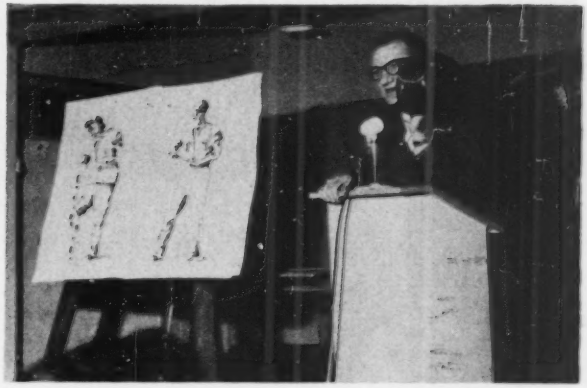
Taking the Guesswork out of SAFETY PLANNING

by David Judge

What is the best way to spend your money on accident prevention? Operational research is seeking the answer



Chief safety officer of the Royal Netherlands Blast Furnaces and Steelworks Ltd. lectures Dutch workers on the value and importance of protective clothing. Research into British industrial safety habits suggests that your employees pay more attention to what their fellow workers say.

PICTURE COURTESY OF B.I.S.F. SAFETY MAGAZINE

THE accident rate is dropping. Each new report by the Chief Inspector of Factories shows a general improvement on the previous year. Yet safety officers are fighting a battle which grows stiffer as the accidents decrease. For the safety improvement graph is gradually levelling out, and management is looking for a plan—either separately as a company, or collectively as an industry—which will jolt the graph steeply downwards.

They are trying to answer this question: Where safety is concerned, money is (within certain generous limits) no object; but what is the best way to spend the money, the time and the energy?

That is how I heard the question recently in a research laboratory in south London—as an explanation of the job which one group of research workers is doing there. This building in Battersea is the headquarters of the Operational Research Department of the British Iron and Steel Research Association. Operational research (the initiated call it "OR") is not a new science, although the name may have an unfamiliar ring for many personnel managers. Much of its work so far has been concentrated in the field of production management. The name was coined in 1938 and its more advanced techniques were first used during the 1939-45 war mainly in the correct deployment of troops and supplies.

At the BISRA laboratory the operational research department under Mr. R. H. Collcutt has also explored new avenues in ergonomics and accident prevention, and in time this groundwork may even lead to the use of OR techniques in other fields of personnel management.

To put it simply, OR sets out to remove the guesswork from management planning. Probably nowhere is this guesswork so evident as in the sphere of accident prevention—particularly when a fresh set of figures gives the lie to last year's forecasts.

Pure research is dedicated to asking, "why?" Operational research, on the other hand, seeks to establish an empirical picture of a given situation, to suggest new solutions to meet the problem, to forecast what will happen when those ideas are put into operation, and to establish accurate criteria for measuring their effectiveness.

The OR scientist does not offer management a "box of tricks". He is not looking for immutable laws which govern actions and results. Rather, he concentrates on empirical "laws"—the rules which appear to fit a particular situation.

Skilled furnacemen of today are necessarily skilled in safe-working. Teaching safety to new recruits yields big dividends.
PICTURE COURTESY OF BRITISH IRON AND STEEL FEDERATION

The first step is to get a scientific description of the situation: for instance, the number and types of accidents suffered, the working environment in which they occurred, and the human factors involved—the way employees (individually and in groups) are trained and treated by supervisors and other management levels.

Some years ago BISRA's Operational Research Department started a research project into accidents at the Park Gate Iron and Steel Company of Rotherham. It has been described by Dr. S. Laner, leader of the project, as "an entirely new venture in accident research". Field workers went into the company with a completely fresh and untried hypothesis—that accidents are part and parcel of the worker's "life" in a company, and that valuable information would be gained by relating them to other significant events in his company life—when he joins the firm, gets promoted, goes sick, goes absent, decides to leave the company or is dismissed. The events, for OR purposes, were viewed as aspects of the social climate in the works, the mutual relationship between company and employee. To establish a common denominator between employees, research was confined to those who had joined the firm in a given year, 1947.

This approach brought to light some astonishing facts. First, people who had left the firm in the intervening years had had about one and a half times as many accidents as those who had stayed with the company (and who could be regarded as part of the company's backbone labour force).

Secondly, the average number of "no reason" absences per individual was found to be consistently higher for those who had accidents, than for those who were accident free.

This led the researchers to suggest that the company could profit by a careful scrutiny of newcomers' initial behaviour, singling out for special attention employees whose "no reason" absence record was mounting.

The research workers also plotted graphs of the errors made by workers in consecutive trials of a new task. They found that this "learning curve" was similar to that obtained by plotting, over consecutive six-month periods, the graph of lost-time accidents sustained by employees who stayed with the company. This meant, said the researchers, much more than the obvious interpretation (that people have fewer and less serious accidents as they become more skilled); it also suggested that training in job skills was as important a factor in accident prevention as in increased production. But the most interesting conclusion was that "a concentrated effort to inculcate safe methods and practices into new employees might yield larger dividends than if the activities of the accident prevention organisation are spread over both old and new labour".

The problem which OR has to solve is: what are the best methods of selection and induction to employ for systematic and effective accident pre-

vention? At the same time, the researchers declare, what holds good in one company, and one group of workers, does not necessarily hold good in another. Much more research is needed before a clear answer is obtained. BISRA's operational researchers are extending their investigations to another two steel companies to confirm or modify their earlier conclusions. They have also been investigating selection procedures for the past four years. It will take at least another 12 months before they can announce their results.

OR, like all scientific research, takes time, for the research worker needs a lot of data—spread over a long period—before he can produce a significant and indisputable pattern.

The latest venture undertaken by Dr. Laner and his OR team promises to be the longest and most involved of all. In 1954 the British Iron and Steel Federation set up an accident prevention committee to investigate the special problems of the industry.

With the aid of the OR department it is now seeking to discover what factors influence a steelworker for or against wearing protective equipment. When the results of this survey have been completed there will, no doubt, be plenty of ideas of value to safety officers in other industries.

The research workers chose safety boots and shoes as their starting point in the investigation chiefly because company stores were known to keep a check on sales figures. Unfortunately, it would be dangerous to use the eventual conclusions to generalise about other protective equipment, since safety footwear is unique in one respect—it is sold and not issued free to workers. There are also psychological features to be considered. Safety shoes are now so carefully styled that they are hard to tell from ordinary footwear. The man who wears them is not making himself conspicuous; he is not "dressing up" in any sense of the phrase.

But because, in the steel industry at least, protective footwear is second in importance only to safety helmets, the researchers felt that it was worth a study in its own right.

The survey has investigated the distribution facilities in the companies they studied. And by means of questionnaire forms, they have discovered what employees think of the facilities, whether they buy footwear from the works store or from a dealer outside, cash down or hire purchase. Workers have been asked to comment on features like durability, appearance, weight, comfort and facilities for repair.

There have been two surprising discoveries so far. First: if a man believes that his workmates are wearing safety boots, generally speaking he will wear them, and vice versa (whether or not his belief corresponds to the facts); and he will rationalise his own behaviour accordingly.

Secondly: the worker in the main does not think of them as "safety boots", but more often as "works boots". The safety aspect hardly ever influences his choice of footwear; he is far more interested in hard wearing qualities than in steel toecaps. This leads to the conclusion that concentration on safety publicity such as horror posters and the announcement of accident figures, is, to put it bluntly, a waste of management's time.

Safety officers and personnel managers in all industries are currently thinking hard about protective clothing and equipment, for this season of the year sees a spate of equipment exhibitions throughout the country. Will the employees wear it? The question will probably influence company orders. In this respect, as in others deeply affecting our personnel attitudes, operational research seems to have a lot to offer—by painstakingly evolving management's future instruments of measurement, policy and practice.

Taking a sample of molten steel. Operational research is seeking to assess the worth of current safety methods.

PICTURE COURTESY OF BRITISH IRON AND STEEL FEDERATION

An imaginative scheme which nourishes engineering skills for the future of the company and the industry as a whole

Trim our training plans? Certainly not!

by Bernard Sluman

'An apprentice taken on today will not be a productive worker until well into the 1960's. It is a hard gospel, but it is precisely at a time of recession that the intake into apprenticeship must increase to take advantage of activity later'.

Hon. Richard Wood, Parliamentary Secretary to the Ministry of Labour, speaking at a 'Training for Industry' conference in Lancaster.

IS training really important? The question arises—in the teeth of the Carr report, the BACIE conferences, and the looming black cloud of the "Bulge"—simply because, to many firms, a training programme is still expendable. "Training is in a precarious position", sighed a training officer recently. "Not long ago, my firm's orders dropped off and the management had to prune its spending. First step: training staff was axed from twenty instructors to eight, *and no new trainees were recruited*".

This is an *obvious* way of cutting back whilst avoiding undue tension between employees and management. But is it wise? Definitely not, say Tecalemit Ltd. of Plymouth. Declares Mr. W. T. Sharp, the firm's assistant general manager and training organiser: "Our training scheme will be maintained at the highest possible level, even in a period of economic retrenchment".

This firm of lubricating, hydraulic and filtration engineers has been in Devon for approximately eleven years —time enough to establish a firm careers tradition. Currently, about 60 boys are undergoing training in various engineering trades at different levels.

Apprentices are taken from amongst the best pupils in Plymouth schools—provided, of course, that they can be persuaded to enter industry. Tecalemit try to overcome the grammar schoolboy's aversion to "a factory job" by building and keeping close liaison with the schools. They lend equipment, old design drawings, etc., in the hope that the boys' natural curiosity and interest will be aroused sufficiently for them to shake off the fear of getting their hands dirty.

Training, according to ability, falls into four categories, all of which are equally important to the operation of the firm's own factory and to the engineering industry as a whole.

Student engineers. School-leavers between the ages of 16 and 17 are encouraged to embark upon a five-year course, leading to graduateship of the Institution of Mechanical Engineers. They must already have passed GCE Ordinary Level in mathematics, English language and two other subjects (preferably at least one science).

These are the boys who the company hopes will move into positions of responsibility in the industry. Their training consists of both theory and

practical work. Full-day release to local institutes is designed to take students through the Ordinary and Higher National Certificates. Afterwards, of course, endorsements on the HNC are required for graduateship of the Institution.

Practical training is given in the factory itself, and students pass through all departments. The aim is to give them maximum experience in all features of engineering: design, production, experimental workshops, tool design and manufacture, pattern making and works administration. All of these, Tecalemit maintain, are essential to the formation of the complete engineer.

Close supervision is given to the progress of the students in each department. It is the direct responsibility of departmental heads to prepare a report on each student. Reports are entered into a bound booklet which bears the name of the student. This is handed to him when he qualifies at the end of the five years and serves as a permanent and attractive testimonial of his qualification and ability.

Craft apprentices at Tecalemit are basically the same as in other companies. They are apprentices in the truest sense, receiving carefully planned and supervised training. Boys are enrolled between the ages of 15 and 16, require no GCE subjects, but must have a satisfactory school record, character and demeanour. They will become fitters, turners, tool makers, etc., after successful completion of their five-year course.

But the company is not at all sure that modern industry should rely solely upon the traditional craftsman with his specialised skills. Agreed, he is important; but will industry require our turners and grinders in, say, ten years?

About eighteen months ago Tecalemit decided that modern developments of industrial machinery were creating the need for skilled men who are not specialists. In fact, says Mr. Sharp, the orthodox crafts are not enough—they do not embrace skilled machinists such as universal grinders, millers, machine-tool setters, etc.

Tecalemit's answer is the **general engineering apprentice** — the boy who is trained in the production shops to qualify in the general crafts of machining, processing and fitting.

One point they want to emphasise: general engineering apprentices will not be passed off as fitters and turners who have been trained generally. They will be skilled and qualified men in their own right, prepared for the more general workings of the modern industrial machine.

Scope for advancement. The ultimate status of the general engineering apprentice is, of course, undecided at the moment. Industry as a whole has not yet taken up the idea. Nor have the professional and educational bodies set up qualifications and standards designed for them exclusively. (For theoretical training Tecalemit's general engineering apprentices are enrolled for the City and Guilds course in machine shop engineering.) But, as an incentive, the company offers its successful apprentices skilled jobs to justify their training. To a lesser extent (for the present) they are given the chance of becoming chargehands.

The last of the firm's four training categories — **learner draughtsmen** — is designed for boys recruited between the ages of 15 and 17 who follow the normal course in draughtsmanship.

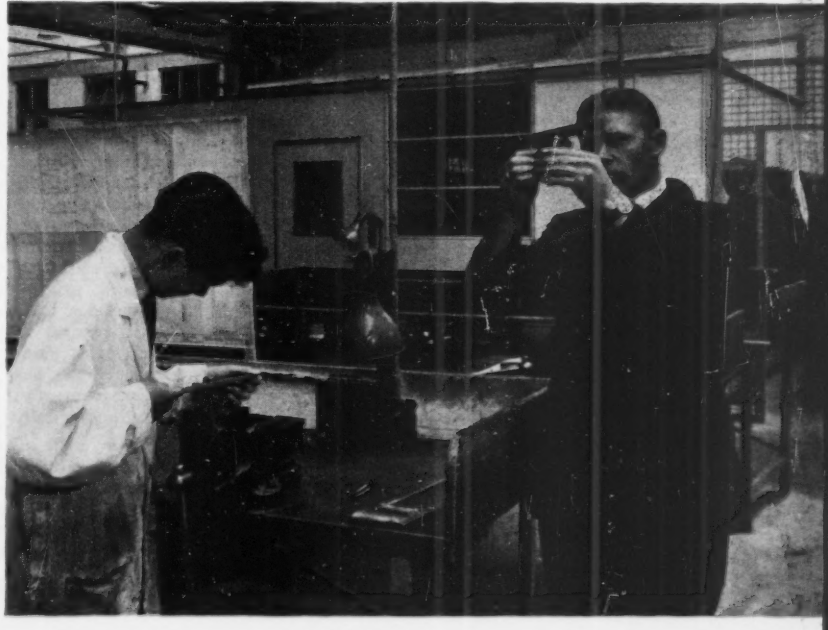
The entire training programme is in the hands of the assistant general manager, while the various departmental heads attend to details of training an apprentice or a student in their own shops.

The personnel manager has the important task of recruiting and selecting the right kind of boy for the job.

Skilled in safety. Another man who has an undisputed place in the programme from the beginning is the firm's full-time safety officer. Each apprentice, before he is allowed to start work in the shop, is given initial instruction in the rules of safety and accident prevention. This is essential to the training programme inasmuch as, if boys were allowed to probe into machines without instruction, accidents would be caused and valuable training time lost. It is also, the firm adds, part of a skilled man's job to be conversant with the basic rules of safety.

Tecalemit, then, plan to produce the right type of craftsman for their factory. But they see the field as a much wider one — the entire engineering industry. Company chairman, Mr. S. G. Gates, describing training policy in his annual report, says: "Naturally, we lose a certain number of these young men ...". *Natural*, that is, to those who regard training as something more than expediency. At Tecalemit they believe the company has a duty to the industry, which is best performed by producing skilled men to administer, supervise and operate the complex machinery of modern engineering.

Management at Tecalemit has a direct responsibility to keep a close watch on progress and to report on individual trainees.



What does the student derive from a short residential training course? This frank cross-section of opinion underlines the free exchange of ideas in conditions of equality

Mixed ideas make for clearer thinking

by Alec M. Hughes

"The benefits of the course did not start and finish with the lectures themselves. During meals, in the library, in the evenings, and during breaks between lectures one had the opportunity of meeting fellow-students and of discussing their problems, which were common to all. One felt that one had become temporarily divorced from the problems (domestic and otherwise) which beset people in their ordinary lives, and that one could direct one's energies to the business of extracting as much benefit as possible from the course in hand".

THIS is a comment from a local government accountant who had attended a course on municipal finance at one of the short-term adult residential colleges sponsored by a local education authority. But it is typical of many students from all walks of life —not least from industry—who have enjoyed a similar experience.

The impact of such a course on the average mature adult is considerable. Since Ashridge was started in 1929 the short-term colleges sponsored by local education authorities, universities, and adult education bodies have attracted more than a quarter of a million students with the informal education and comfortable conditions which they provide—for a very modest fee. Because they are organised by outside bodies, and because both educational and economic policy demand provision for as many diverse groups as possible, these colleges have made a unique contribution to adult education.

They give students opportunities for intellectual and social contact with tutors and fellow-students, of a kind which would be impossible in most other forms of adult education. They offer him unique opportunities for meeting senior persons in industry, education, and public life—the managing director, the director of education, the eminent politician, the research worker —who could, rarely, if ever, spare the time to conduct an evening class, but who is occasionally available to contribute his special knowledge and experience in the informal context of a short residential course. Most significantly the short-term college has attracted an important newcomer to to adult education—the industrially sponsored student.

How far does the student appreciate this experience? A detailed investigation (by the writer) of the reactions of some 300 students attending courses at one college revealed that the overwhelming majority—the bulk of whom were attending industrial management courses—anticipated what they considered to be an unpleasant return to formal education. They found, to their surprise, an atmosphere of ease and informality, the chance to express their own views and seek those of their fellows, and a tendency to work themselves far harder than they had intended when they arrived. One 43-year-old supervisor anticipated:

"A fairly bleak atmosphere; a certain amount of officialdom and red-tape; dormitory conditions for sleeping, and a large one- or two-table dining room".

To a younger (29-year-old) supervisor the prospect was even bleaker:

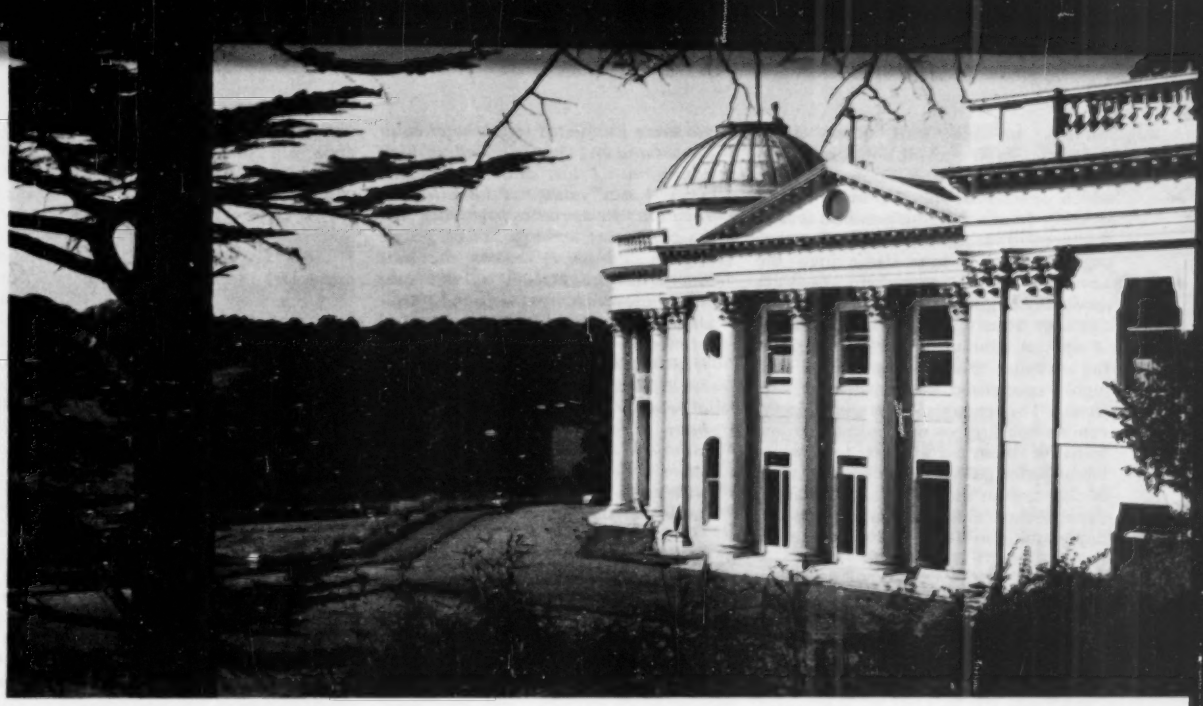
"I expected to find a cold school and an unhappy time and to get fed up with the lectures".

One shipping clerk was more specific in his fears:

"A training establishment of somewhat austere type—that is to say, below the average of accommodation and catering . . . yet another example of the desecration of one of the 'stately homes' by the Education Authorities".

One might have expected such reactions in some of the many students who had left school at 14 (or earlier

Alec M. Hughes is part-author of *Supervisory Management Notebook*, published by Newman Neame, 1953 (21s.), and author of *Short-term adult residential college problems of post-war Britain*, published by Micro-Methods Ltd., on microcards (21s.) and microfiches (30s.).



Sundridge Park Management Centre: this 18th century Kentish mansion was first established as a residential college in 1955.

in the case of some of the elderly ones). But it came as a shock to find education associated with strictness and austerity in the minds of young men but recently out of grammar school. So many had become convinced of the didactic nature of teaching and its apparent divorce from the stern realities of daily living in our modern industrial society.

Attitudes Changed Rapidly. How their attitudes changed after a short residential course:

"The most interesting feature of the course in my opinion", wrote a 37-year-old dock worker, *"was the simple way in which the class was mixed, with men from all parts of the country, and in different classes of employment, so that it became a class of mixed ideas. From the other students' point of view I think they at least learned a good deal about my side of it; more than they would do in 12 months if they did not attend this course"*.

This student was a member of a course recruited from both dock workers and supervisors from many different ports, each of which had its own local practices and conditions of work. His experience, therefore, illustrates some of the advantages of mixing people from different jobs and different localities. But the benefits of residence are felt as strongly by those who attend a course with others from their own firm. Thus a 54-year-old male clerk from a well-known national newspaper, who attended a special course for employees of the firm, declared:

"Having now realised that more was demanded of us by discussion in groups—and being asked why we arrived at certain conclusions—more thinking was necessary, and we had to work harder than was expected".

For a foreman maintenance blacksmith (age 48) the most significant experience was:

"... the confirmation one receives that, in spite of certain changes, other people have the same basic problems as oneself, this being brought out mostly during informal discussion in the lounge".

A chargehand wireman (age 30) confirmed this when he stated:

"I think that, generally speaking, the greatest single benefit is the opportunity of meeting other people in similar positions to your own. You learn a lot from them; but more important still, I think, is the fact that you realise you are not the only one with problems and troubles at work. It is so easy to get around to thinking that you have got loads of work and the other fellow has only got a little. I think it will prove a great help when one gets back to work and is in the 'heat of battle', to know that the 'boys', as we have come to know them, are probably struggling with their problems too".

Seeing from Outside. The mixing of students from various organisations is a very important—and much appreciated—feature of courses run by the short-term colleges. A supervisor in an oil mill was intrigued by the new vistas which this experience opened up: "It fascinated me to see my firm from the outside". Another found that he was far more favourably disposed to his own management after hearing about conditions in other firms.

"I enjoyed [the course]—very much so. Any person who has worked in a factory for a long time is inclined to become a little smug, to think that the factory is not running as it should. That course opened my eyes. You develop the impression that your factory could do a lot better than it does. But the course also makes you think that your own factory is rather advanced in many ways. It made me realise that other factories were far behind the one I work in".

At a college which runs management courses concurrently with others there is a valuable opportunity for those from

industry to mix with others from different walks of life—a mutually beneficial situation. Those colleges which specialise only in management training do enable managers in one firm to meet their counterparts in other organisations, whilst enjoying the advantage of specialist facilities (probably a much larger industrial management library, perhaps certain items of special equipment for training, and the occasion to employ a tutorial staff highly specialised in management subjects). The management training centre run by one firm or one industry enjoys some of these advantages too, whilst being better geared to the specific needs of that firm or industry—accessibility to departments and equipment and the opportunity to study problems on the spot.

Human Factor. Of greatest significance to them all is the human factor as a real element in management training: something not only to be discussed in detail as a part of the course, but a vital incentive to students to wring every drop of value from the training they are given, as this quotation shows:

"To tell you the truth when I first got there I expected to be rather cold-shouldered. I haven't had a high education. I lost both my parents when I was young. I have had to rough it. I was rather frightened that I would come across a lot of people who would leave you on the side. But after the first 20 minutes the whole aspect changed. I found people like myself—I spoke to quite a few of them . . . I did really have a lot of fear of going. But after 20 minutes I was at my ease. I came away with a better outlook on life. I've never been to a place like that before, although I've been in the Navy 15 years. I've tried to encourage my wife to go since. I think she has the same fear that I had before I went".

It was an air traffic superintendent who described what he believed to be the purpose of such a training course as *"to help adults to be good mixers and to realise that success in any form of human endeavour is dependent on team work and joint effort.*

Learning by Example. If short-term residential colleges have proved nothing else they have emphasised the importance not only of imparting correct information but of imparting it correctly. In management training, perhaps more than anywhere else, one learns as much by example as precept.

This is best illustrated by negative examples: the two middle managers, for instance, who arrived on a course on joint consultation blazing with indignation because their higher management had (on the day they left for the course) committed a gross breach of the rules of joint consultation. Or, again, the rude behaviour of a very well-known senior executive—famed for a book on human relations in industry—who suspected (wrongly as it happened) that one of a group of graduate management trainees was dozing during his lecture. It was the end of his lecture as far as the audience was concerned.

The residential centre, whether part of a wide field of adult education, a specialised department of management training, or an integral part of a firm's education department, has a unique environment in which to operate.

It offers the most important contribution that can be made to the education of adults—the chance for a free exchange of ideas in conditions of equality.

Teaching and Practising. This, surely, is the only way in which a man can learn something of the art of managing others. Yet it is something which can easily be degraded to a form of didactic teaching—the very thing which, rightly or wrongly, the average adult dislikes most about the education he can look back on. Liberal education for the specialists in our technical society is something which is rightly receiving increasing attention today. It is concerned in part with the curriculum. But it is concerned too with a question of fundamental attitudes on the part of the educationist.

A junior executive in a shipping-broker's office who had attended a course on human relations in his own industry some months previously was asked whether he thought it had influenced him in any way. He replied: "When I go down to the docks now I don't handle cargo; I deal with men". This is a lesson the adult educationist must learn too. In *teaching* management he is *practising* management as well. The short residential course may provide him with the optimum conditions in which to work—but his work will only be effective if he appreciates that he is not just dealing with management training, but dealing with men.

An atmosphere of ease and informality: to many students this is one of the vivid impressions of their first visit to a residential centre.

New Books

New Films

Attitude to Work

Social Structure and Personality in the Factory. By Paul Lafitte. *Routledge & Kegan Paul, 25s. 6d.*

WORK IS SUBORDINATE to the man who is himself permanently subordinate. This is one of the general conclusions arrived at by the investigation which this book describes — an investigation into the attitudes of over 200 workers in seven Melbourne factories engaged in various manufacturing processes. What did they think of the job, the pay, the boss, their place in society, their outside activities?

The average worker interviewed thought of his job only in terms of its relation to similar jobs which he would be likely to do — there was no general comparison with jobs of an entirely different nature. He regarded pay as a means to meet outside committments — there was no question of its being a return for services rendered. He also felt that the boss should make himself known to employees and should not adopt a superior attitude; this applied equally to supervisors.

With regard to work as a whole, the employees did not see it as their most important engagement — that was either the family or themselves. Work was simply a means of earning a living.

Although the findings are admittedly not representative of worker judgment in Britain — nor in Melbourne for that matter — the personnel manager may find that they partially explain attitudes which he himself has come across.

Group Predictions

Behaviour of Industrial Work Groups. By Leonard R. Sayles. *Chapman & Hall, 39s.*

A TWO YEAR STUDY in 30 American firms has led Dr. Sayles to question some well-established theories on the behaviour of industrial work groups. His investigations conclude that, although no one definition holds good for all groups, it is possible to determine the ways in which certain of them will behave towards management and unions.

His new ideas stem from the belief that group reactions are determined not by individual workers but by the work in which they are engaged, and the way jobs are distributed and flow into one another. This, he explains, is why it is sometimes possible to replace people in a group, to change the leader, yet still to get the same resultant behaviour. You can put an entirely new group on to the job, and they will react in the same way as the old.

The author explains how work structure (he calls it "technology") affects the group, and he analyses the different types created by separate jobs.

Dr. Sayles makes valuable comments on the place of the supervisor. For example, he regrets that so far supervision has been based on the idea that the supervisory qualities are universally applicable.

A talking point for all personnel managers is provided by the author's suggestion that "perhaps we have come the full circle in the field of personnel relations to the point where engineering considerations are once again crucial".

Books Received

Private Company. By Dudley Barker. *Longmans, 16s. 10d.*

THIS NOVEL is set against the background of modern industry and deals with the clash of personalities and the struggle for power. The battlefield ranges from the boardroom to the worker's parlour.

* * *

Thinking of Self Service? By Tickopres Ltd., 5s. 4d.

A forty-page booklet designed to help shopkeepers who are converting to self service selling; deals with planning the change, sprucing up the place, price marking, public relations. There is also an additional booklet—prepackaged—on prepackaging.

* * *

Instructional Material for teaching Profit Sharing at the University Level. By J. J. Jehring. *Profit Sharing Research Foundation, 15s.*

American pamphlet gives students some idea of the arguments advanced by certain groups against the idea as well as those in favour.

Manners and Money

"FILMS FOR INDUSTRY", the latest (1959-60) catalogue issued by the Central Film Library, lists 612 films for industrial use on 16mm. projectors, plus a section on filmstrips.

Two acquisitions, too late to be included in the catalogue are *Telephone Courtesy* (16mm., 25 mins.), a topical American study in the importance of good switchboard manners; and *Britain's Youth: Young People in their Leisure Hours* (filmstrip, 37 frames, sale only, 7s. 6d.) which describes a few of the youth societies which young people may join, and how older people can help.

* * *

TWO NEW FILMS are now available from the British Iron and Steel Federation library. Mainly intended for foremen, they are also suitable for other personnel and are not confined to the steel industry. *Money and Steel* (9½ minutes) illustrates the capital structure of the company, the way in which fresh money and reserves are used to pay for development and expansion. It also deals with how income pays for raw materials, wages and salaries, services and other expenses.

Counting the Cost explains how delays in production—caused by breakdowns, mishaps or carelessness—affect costs and therefore profits.

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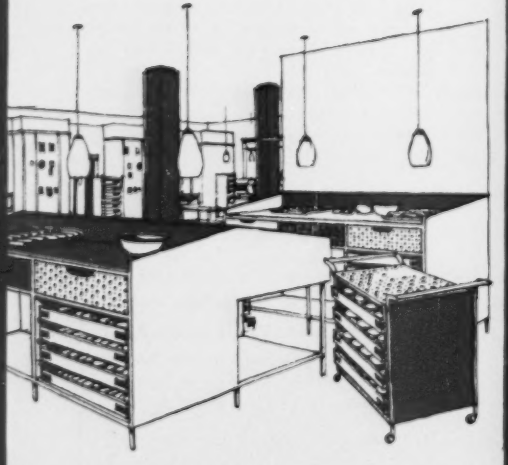
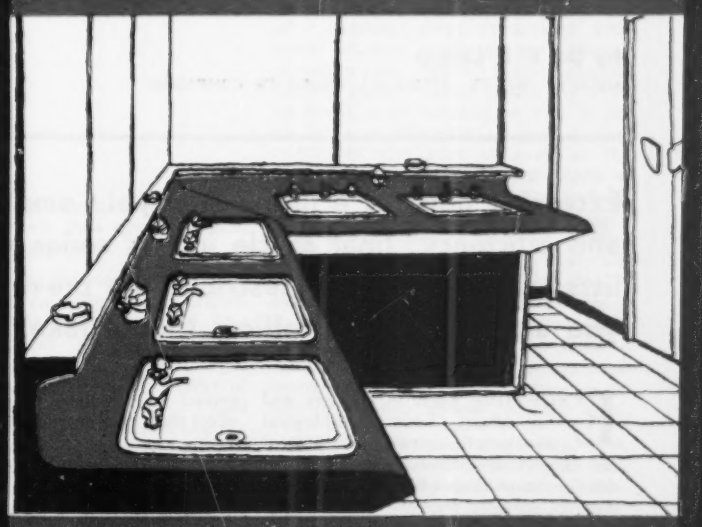
Flat or curved, if dirt or factory dust *does* settle on a Formica surface, just give a quick wipe with a damp cloth and it sparkles fresh and clean as the day it was installed! Here's lasting good looks—and economy, too—for Formica laminates will go on giving you this unrivalled service through many years of rough usage.

The illustrations on these pages give some idea of the almost limitless possibilities these surfaces open to modern factory design.



Formica surfaces in the Canteen
Morale building surroundings for meal-time relaxation, and so easy for the catering staff to keep not just clean but shining, no matter what gets spilled. On table-tops, counters, serving hatches, panels—and for absolute hygiene behind the scenes in the kitchen.

* **Formica surfaces in the Cloakroom**
Vanitory units—the latest brilliant application of Formica decorative laminates; luxurious, space-saving units that house all the requisites for washing and grooming, while banishing all unsightly pipes and plumbing from view.



Formica surfaces in the Despatch Bay
Hard knocks and heavy duty again call for the toughness of Formica laminates. Gum, ink, sealing-wax—none of them can spoil these surfaces for longer than it takes to wipe them clean again.

* *Formica and Vanitory are registered trademarks*

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A healthy factory has nothing to shout about

by Dr. E. E. Lieber
MEDICAL OFFICER, MICROCELL GROUP OF COMPANIES

Excessive noise is a menace to your employees' safety, well-being and efficiency; final article in this series on industrial fatigue lists the dangers and describes the preventive measures which you and the medical officer should take.

EXCESSIVE noise in industry and its effects, both physiological and psychological, are at present the subject of intensive research. On the Continent claims for loss of hearing due to acoustic trauma are common, while in some British industries, such as heavy forge operating, deafness is not merely an occupational hazard, it is almost a certificate of qualification and experience.

If we work in an environment where noise makes normal conversation difficult we are obliged to shout in order to make ourselves heard. *This is precisely the point at which noise becomes physiologically harmful.*

It is harmful in the first place because this is the threshold at which damage to the internal ear and deafness are caused. Damage may be only temporary, but if the exposure to noise is prolonged it may become permanent, and such noise, as we know, is common in industry. Very loud noise can cause permanent damage, and sharp, interrupted sounds have a more harmful effect than continuous sound.

The secondary effect is the increased *strain on the nervous system* caused by the additional effort to hear and be heard.

A loud, unexpected sound can cause a rise in the blood pressure and a decrease in peristaltic waves, which results in abdominal discomfort. Much attention has been given to this problem as it affects the physiological mechanisms. There are reports of individuals working in a noisy environment who have experienced nausea and severe eye symptoms besides various forms of fatigue phenomena such as tension and headache.

Proper evaluation of the noise problem involves a study of conditions in the working or living environment—plus the emotional state of the individual concerned.

Prolonged or repeated noise, or noises which are expected, do not especially interfere with performance so long as they are below the level of hearing damage or are "filtered out" by the ear's natural reflex process, even though they may affect normal speech. Ground staff on airfields are able to continue working in spite of loud, intermittent noise, and even housewives living in the vicinity are not more than momentarily affected by the frequent sound of low flying aircraft because, after a time they acquire the same filtering ability.

I remember when first working in a chest clinic, close to some firing ranges, being sufficiently startled by the unexpected sounds of intermittent gunfire to be distracted from my examination of patients. After a very short time, however, I was able to ignore it; in fact, I ceased to be conscious of it.

Noise causes Fatigue. From the viewpoint of occupational health the effect of loud noise on speech and audiocomprehension contributes considerably to the reduction of efficiency in factories and workshops. The

In a noisy workplace inability to communicate can create a source of irritation, frustration and ultimately fatigue.

employee's inability to communicate forms an additional source of irritation which, if it goes on for a length of time, may produce anger and frustration and so lead to fatigue.

The problem of deafness as an occupational disability cannot be separated from the temporary deafness which may be produced as part of the individual's job. If a number of persons in a community are engaged in occupations in which noise is a factor the community as a whole may accept higher noise levels, of the same general frequency characteristic, than a similar community with fewer persons so exposed.

Any person who is exposed to high noise level to which he is not accustomed will at first suffer only discomfort. But after an interval, if the noise continues, he will be subjected to changes of mood. Emotional responses may become more extreme and it is easy for such a person to over-act on the slightest provocation. Nervous tension appears, together with unusual responses to stimuli that would be ignored under more ordinary circumstances. Fatigue and lethargy directly caused by noise are frequently found in factories which are acoustically poor.

Intense noise, where it does not give rise to lethargy, has been known to increase muscular tension, inhibit digestive processes and lower workers' general alertness and efficiency after relatively long exposure.

Long time to recover. In a noisy environment even recovery from general fatigue and exhaustion is retarded. This phenomenon can be found among factory workers as well as among flight crews after successive days or weeks of continuous flying. This may be said not only of recovery of normal hearing (in the case of persons with a "low threshold" deafness), but also for more generalised fatigue *which may have its origin in the central nervous system.*

What do we mean by "noise"? Or rather, what is meant by sound, since "noise" is merely a term we apply to any sound which we find objectionable. The ear is sensitive to very small variations of pressure but it can tolerate an extremely high intensity of *accustomed* sound. The unit of measurement of sound intensity is the *decibel.*

When considering noise in terms of the decibel scale we must remember that it is not enough to consider the physical characteristics of sound since the perception of the waves is a psychological function carried by the human ear. The vibrations which enter the outer ear, the membrana tympani (ear drum), and then transmit it from the middle ear to the inner ear, are reconverted into nerve impulses and are interpreted as a sensation of hearing. The sensation of pitch depends upon which group of nerve fibres is activated —and not upon the frequency of the impulses. Thus we can say that "loudness" is dependent on the total number of nerve fibres activated in each group.

The human ear can perceive sounds over a wide frequency and a wide range of intensities; every physiology textbook contains graphs of the auditory sensation area. When a sound increases beyond certain values it can not only be heard, it can actually be *felt.* It can be felt as a discomfort or even a pain.

Persons who work at levels of 115 decibels show no deleterious effects in performance. It is only in individuals exposed to noise of over 120 decibels—such as the noise of turbo-jet engines —that an appreciable effect is observed.

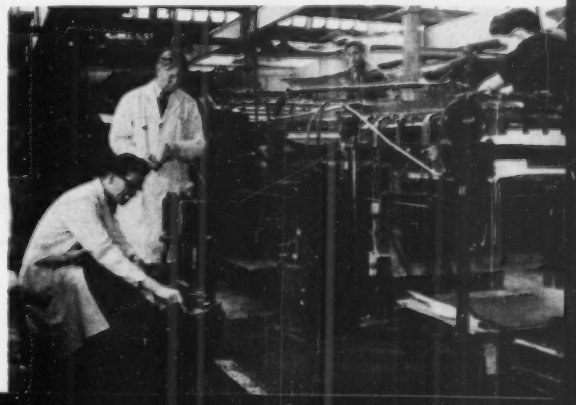
The characteristic of sound, that is most important for noise reduction is its loudness—or the symptomatic sensation of the strength of the noise—because we know that tones of the same intensity but of different frequencies do not necessarily appear equally loud.

Noise surveys and evaluation.* A complete evaluation must take into consideration the physiological, psychological and physical aspects of noise. There is no simple solution to this

(Continued on page 47)

* A useful guide to the mechanics of conducting a noise survey is *Noise Measurement Techniques*—Notes on Applied Science, No. 10, issued by the National Physical Laboratory in 1955, reprinted September, 1958. HMSO, 3s. 6d. (plus 4d. postage).

Measuring the noise of printing presses with a Dawe Type 1400 sound level meter.



Guidebook to Safer Working

Review of our latest aids at the Scarborough exhibition

Every day is a safety day. But for one week-end this month (May 8-10) industry will be devoting particular attention to accident prevention when safety officers and personnel managers from companies throughout Britain meet at Scarborough for RoSPA's national industrial safety conference. The latest trends in safe practice that are to be discussed in the Spa concert hall will be echoed at the trade exhibition nearby. This three-page review for personnel officers lists some of the equipment to be shown.

Bodies. Made from tough yet flexible cotton duck, lightweight foundry clothing (Industrial Safety Division, R.F.D. Ltd.) is flameproofed by the Timonox durable anti-flame process. Special features: the two-piece suit is said to weigh only one-third the weight of asbestos suits; areas most vulnerable to molten metal splash have leather and/or asbestos facings if required. This range includes suits especially designed for scarfers, slaggers, furnace men and pourers.

Eyes. Fleming Safety Equipment will be showing several additions to their wide range of eye protection devices. The transparent goggle No. 0080 is designed in P.V.C. for the chemical industry, and estimated to give 50 per cent more ventilation. Model 3035 is recommended by the makers for the use of visitors to factories.

The firm's lens cleaning and demisting cabinet, they say, keeps eye protectors in good condition and helps to persuade workers to use them. Also on show: the Master Sight Screener, designed to spot workers with monocular vision or any other defect which might impair their efficiency.

The type 021 spectacle frame (Hadley Co. Ltd.) has the same fitting as an ordinary spectacle and is made in three bridge and temple measurements, plus two eye sizes. On all models the temples are fitted with hygienic plastic tubing which adds to their appearance and, say the makers, takes care of the workers' comfort. The firm also publishes a booklet, "Message to Workers", to aid safety officers in their task of persuading workers to wear eye protectors.

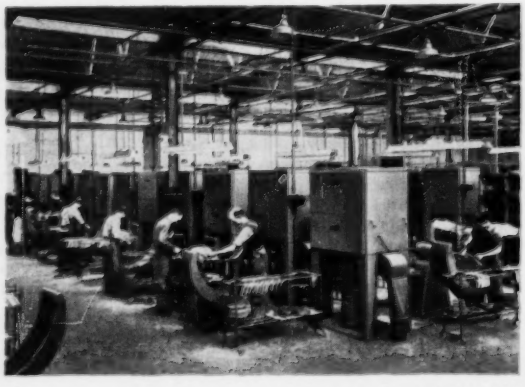
The new Itex P.V.C. Monogoggle (Safety Service Co. Ltd.) has a transparent P.V.C. frame, combining all-round vision with adequate ventilation through a mesh system. The one-piece lens is of non-inflammable material and is claimed to be shatterproof and easily replaced. The curved shape is intended to deflect flying particles and to extend the field of vision.

The Panorama heat reflecting swivel face shield (Panorama Equipment Ltd.) is fitted with a patented ratchet head adjustment unit to enable it to fit all head sizes. It also has a deep spark-guard to shield the wearer from flying metal particles. Special feature: gold treated acetate shield which can be worn in front of coke ovens. It is claimed that this will enable workers to stand in front of ovens or furnaces for long periods without any discomfort.

Feet. The P.5088 brown jungle hide Gibson shoe (Protective Footwear Service Ltd.) is designed to incorporate special heat, chemical and oil resisting properties. Sole and heel are welded to the upper by direct moulded process to give lightness and flexibility. The sole is deep-cleated for grip and hard work. Model P.5089, a new tan semi-brogue shoe has a notched storm welt and Plus-Fifty leather sole and rubber top-piece heel.

Lightweight men's casuals (Wilkins & Denton Ltd.) incorporate steel toecaps yet, say the makers, are indistinguishable from ordinary footwear. Soles are of "Dri-ped" chrome tanned, hard-wearing leather; heels are of cleated rubber.

Dallow Lambert ▶ unit dust collectors covering dust generated by polishing operations.



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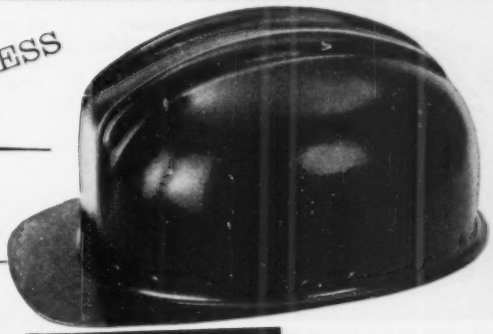

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The new improved **F5/11** model illustrated is the result of intensive experiment and research. Lightweight yet capable of withstanding a 40 lb. drop impact test, it gives maximum protection against injury from falling objects for workers engaged in mining, quarrying, shipbuilding, structural engineering and similar occupations.

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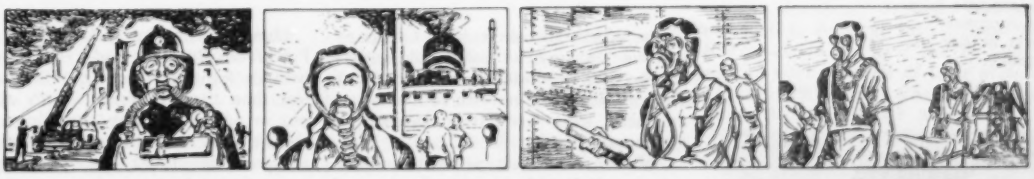

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The flexible tube of lightweight plastic is coupled to the main sprayer air supply via a simple adaptor and quick-release plug, which can be fitted to the gun handle within minutes. Adaptors are available for all types of gun.
An inner flange on the soft rubber facepiece ensures an airtight fit on all shapes of face. The movements of a man using this outfit are freer, since he requires no additional equipment. *Write for further details.*
SIEBE, GORMAN are long-established suppliers of all types of safety equipment to the Admiralty, the Public Services and Industry.

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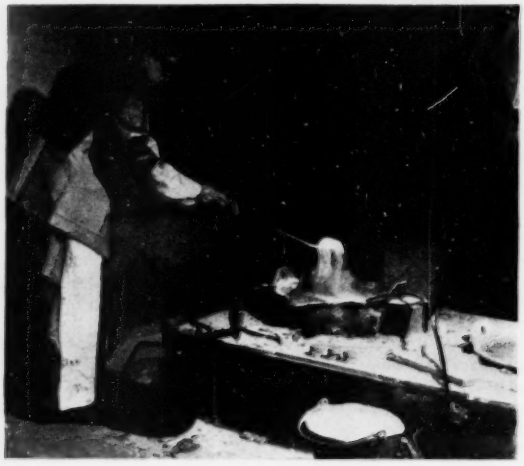
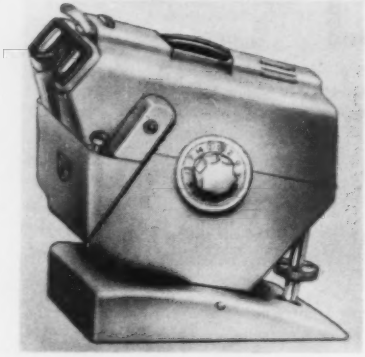
◀ *Nuway fibred rubber inserts of non-slip material.*

◀ *Itex P.V.C. all-transparent Mono-goggle.*



R.F.D. light-weight foundry suit in use on the dusting of molten magnesium. ▶



▲ *Fleming's Master sight screener detects ocular in-efficiency.*

▲ *The anti-dermatitis hand cleanser DIPspenser.*

The North British Rubber Company will be showing its industrial waders which come up under the armpits. They are supplied plain or with rubber boots attached; soles are either cleated or leather with studs.

This firm's newest products include redesigned Rockfast ankle boots and Rockwell knee boots with improved adhesion of the steel toe. A special rubber coating on the toecap, they say, is anti-abrasive and resists scuffing action. Special feature: vulcanite mid-sole to resist penetration by sharp objects. Also shown will be a new crêpe rubber boot which is claimed to be 20 per cent lighter than the conventional equivalent—plus rot-proof socks, sponge insoles and rigid shank supports.

In addition to their range of Eliminax clogs, F. Walkley will be showing for the first time in this country the Commando sole and heel; these are firmly cemented to wooden clogs and secured by acid-proof screws. The Commando can be attached to any design of upper.

Hands. The Ibex DIPspenser (Ibex Petroleum Products Ltd.) is claimed to provide hand cleanser for 100 men in less than three minutes. Tests carried out in actual working conditions have shown that one gallon of cleanser is adequate for 1,500 washes, using this new finger-dipping device. Special features: it avoids waste and pilferage, and will be supplied for free trial and on low rental terms to users of Ibex anti-dermatitis hand cleanser. Free maintenance service is available.

Plastochrome gloves (Northide Ltd.) are claimed to be the lightest fabric-supported industrial gloves on the market. They are resistant to water, oil, etc., and their special crêpe finish is said to give them amazing grip on wet surfaces. A life of up to 10 times that of traditional gloves is also claimed, plus the reduction of fatigue and increase of dexterity.

Safe breathing. Two sections of ducting will be installed on the stand of Dallow Lambert & Co. Ltd. to show the quality and workmanship of the

◀ *The Panorama 58 unbreakable nylon eye-shield is fitted with removable acetate lens.*

▲ *Siebe, Gorman's Mark VIII dust respirator with moulded rubber facepiece.*

▲ *The lightweight man's casual with steel toecap by Wilkins & Denton.*

firm's range of dust control equipment. This includes plant installation work, Drytex and D.M. unit dust collectors, Drytube filters and Multiswirl wet de-dusters.

The Mark VIII dust respirator (Siebe, Gorman & Co. Ltd.) comprises a well designed moulded rubber facepiece which is claimed to give a comfortable and airtight fit to all shapes of face. The filter which is attached to a plastic holder comprises two main components: a cotton pre-filter to trap coarse dust particles, and a fine, resin-impregnated Merino wool filter for finer dusts. The respirator is held on the face by an adjustable, elastic harness made up of four bands. An exhalation valve is positioned in such a way that any condensed moisture which may accumulate is discharged to the atmosphere as the wearer breathes out.

R.F.D.'s shot blast helmet is moulded in fibreglass and covered with a tight fitting resilient rubber envelope made in two window sizes. The air inlet connection, for ¾ in. bore supply hose, is at the back of the helmet and the air is channelled downwards over the window to prevent misting. The inner window of .080 in. Perspex is fixed and sealed to obstruct particles which might enter from outside.

R.F.D. Ltd. are also displaying a one-piece, air supplied suit fitted with emergency oxygen equipment for use in the event of the air supply's failing. It was developed for use in the handling of Ethyl fluid and leaded gasoline and in the cleaning of gasoline storage tanks. The suit is designed to seal the operator off from toxic vapour fumes, dust, etc., and to provide a supply of cool air to all parts of the body. The suit is in P.V.C. white-coated fabric and is worn with separate gloves and knee length boots. It is zip-fastened with a double-overlapping press-studded flap, and provision is made for exhausting air below the elbows and above the knees by non-return valves.

Safe floors. Alogrip non-slip flooring compound (Carborundum Co. Ltd.) is made in two grades—industrial and regular. The former produces a fairly coarse surface which, claim the makers, gives maximum grip to heavy boots and traffic. The regular grade they recommend for use in office buildings because of its finer finish. They say that surfaces laid with this compound are proof against all climatic conditions, sea water, dilute acids, oils and greases, petrol, paraffin and all industrial solvents with the exception of Methylene Chloride.

Furmoto non-slip floor polish (Furmoto Chemical Co. Ltd.) is claimed to feed the floor, stop drying out and protect it from the harmful effects of water. Normally colourless, this polish is now available in medium oak and red—for parquet and red tiled or stone floors. They claim that one pint will polish approximately 2,000 square feet of flooring.

Flowforge-Nuway safety treads (Nuway Manufacturing Co. Ltd.) consists of fibred rubber inserts used in conjunction with Flowforge flooring. The inserts are of the same tough, resilient, non-slip material as embodied in the Nuway industrial matting. This type of flooring is claimed to minimise the risk of slipping, particularly on works gangways and stairways which are subject to heavy traffic.

Safety signs. D.M. Reflective Products will be showing Codit, a new reflective liquid which can now be bought for painting ordinary installations. Scotchcal, a new fluorescent material, is demonstrated to show how objects above eye level can be illuminated to warn workers of their presence. This material is said to have a life many times that of similar paints or inks. Special feature: Scotchcal does not require light to be reflected on to it.

Fire protection and detection. The Auto-Thermatic system of fire detection, Mark IV (Sound Diffusion Ltd.) was developed to overcome the difficulties of the normally complex and multi-sectionalised conventional systems. Principle: in each fire area there is a small pulse box which is connected with all the others, and with central equipment, in a single ring circuit. When the alarm is triggered off—either manually or automatically—a signal is passed to the central control equipment. A return signal is then given from the centre until it finds the relevant pulse box. The signal is sent back to the central control and a permanent indication of the fire's location is given. Local section alarms are then sounded automatically.

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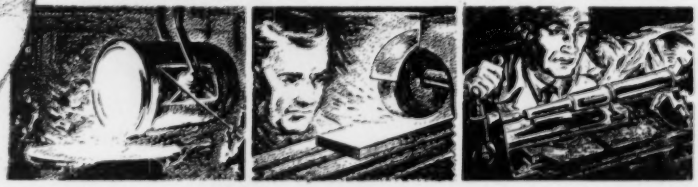

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RoSPA National Industrial Safety Conference Exhibition, Scarborough, May 8-10.

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Eyes on Safety

A glance at other people's ideas and achievements

FOREMEN and managers at the Irthlingborough Mines of Richard Thomas and Baldwins have an eye for safety—a glass one. Their approach is gruesome but effective. A worker begins to sharpen a tool without putting on protective goggles. The foreman walks up quietly and holds out an eye (picture above). "What colour are your eyes? We just want to know so that we can get one of these ready for you".

A MILLION working man-hours without an accident is the record of the Durban, South Africa, factory of Lever Brothers. Presenting a pair of white gloves to the works manager, the company chairman, Mr. A. D. Gourley, congratulated managers and foremen on the record for, he says, "accidents indicate faults in management".

"NO ACCIDENT" certificates have been awarded to a group of departments at Fort Dunlop to mark the completion of almost four years without an accident. The Fort's accident prevention record for 1958 is one hour lost for every 173,000 hours worked. For the story of how Dunlop do it, see "One Accident is Far too Many", PM&M September, 1958.

THE "DO'S" AND "DON'TS" of safe working are a major part of apprentice training at Birlec Ltd. The photographs (right) are from a series taken specially for permanent display at the company's training centre in Birmingham.

To punch the message home to older workers the firm is featuring two of the "don't" pictures in its house magazine, *Birlec Bulletin*.

ABOVE: *Don't leave tools lying on the machine. Don't remove swarf with your fingers. Don't get your head in line with the moving machine; metal splinters can fly in your face.*

BOTTOM, *Left. Don't lean on machinery. Don't leave cutting tools or rotating spindles unguarded. Don't leave tools on the work bench. Right, Do take all necessary precautions.*

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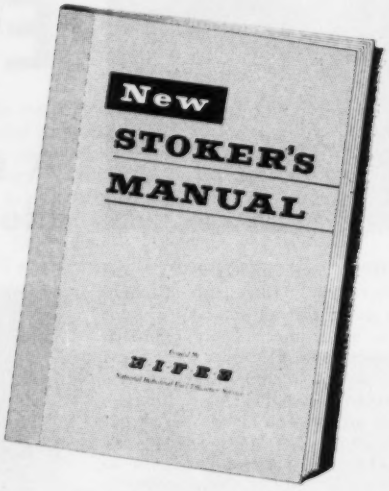

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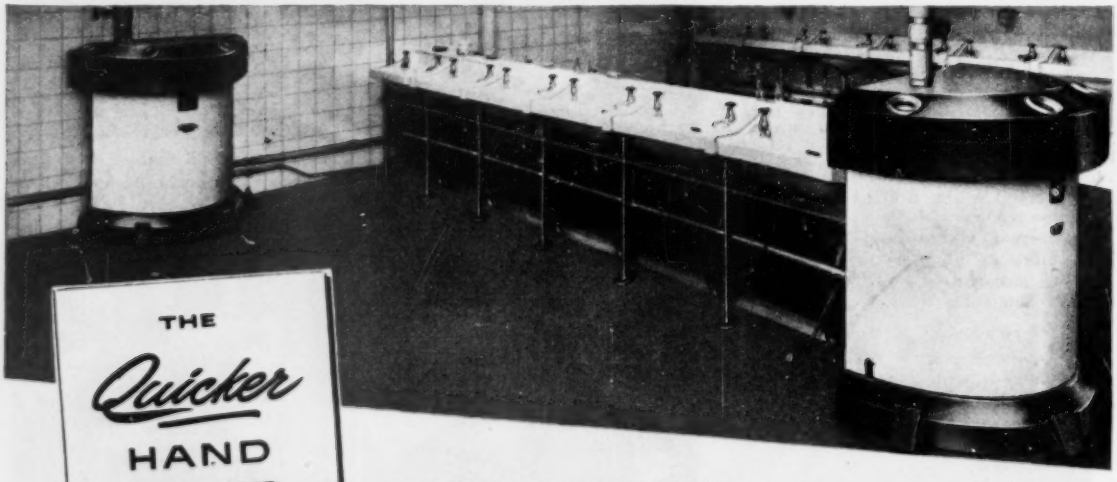

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Discussion Leader

No Time for Training Officers

How to win enemies, influence nobody

MORE letters from readers in different parts of the country on the subject of making changes shows what a real personnel problem this is today. One which raises some very common problems, comes from a newly appointed training officer who says:

"My firm has recently been involved in some reorganisation, particularly in personnel policies. We have devised new procedures for recruiting and selecting employees, and restyled our wage and salary structure, so that increases are now based on merit rather than on factors like age and seniority.

"I have been a member of the firm for some years and I was recently appointed training officer as part of this general reorganisation policy. On the day my appointment was announced one of the departmental managers rang me up. 'I hear you're our new training officer' he said. 'Who do you think you're going to train?'

"Later another foreman rang me and said very much the same thing. 'You needn't come here with your new fangled notions. Our section won't waste your time'.

"So it looks as though my job is not exactly going to be a sinecure. Yet, if the various managers and supervisors had been called together before my appointment and my duties thoroughly explained to them, I wonder whether this suspicion need have arisen. Although I think my title may be against me. Perhaps, if I were to be called 'co-ordinating officer', or some such general term, they would not feel so badly".

Well, there it is, a fairly common story. Reorganisations and changes in a firm make many people uneasy. A new training officer, particularly if he is promoted from within, is a good focal point for the hostility even though the main impetus comes from the feeling of uneasiness which the changes as a whole are creating.

As far as this case is concerned, I do not really think that a change of title is the answer. If you are there to train, it is no use camouflaging the fact. *The way you set about your job* is, however, another matter. If you show these line managers that you are there not to tell them what to do, but to supply a service from which they can all benefit, their fears will gradually subside. If you use democratic methods to set up your schemes, and democratic methods of teaching you will soon demonstrate that this change is an improvement on the old order.

Why not, as a first step, call a meeting of the supervisors concerned in your first training venture and ask them for their advice and suggestions?

The introduction of new training schemes into a firm is so often a difficult and precarious move. I know of one managing director who announced to a meeting of his factory managers, that he wanted to launch a training course for all their supervisors. When did they think was the best time to hold the sessions?

WHAT DO YOU THINK ... about bad communication, hostility to change, how a firm's structure affects its efficiency and morale? Let us have your opinions. We pay a guinea for each letter published.

Two hours later the meeting broke up—having settled nothing. The feelings of the managers had held up progress. One manager feared the scheme was directed exclusively at *his* supervisors and was intended as a criticism of his management. Another manager resented having the suggestion come from above. Another manager had two older supervisors, and knew that they would not like the idea at all.

These fears had to be overcome before real progress could be made. Luckily this managing director was sensitive to the atmosphere. After the first abortive meeting he saw each manager privately, and spent time reassuring him that the scheme was a criticism of no one—but a benefit to all.

Morale—problem of size?

I WONDER if we all fully understand just how the organisation and structure of a firm affects human relationships at all levels. So often in past years management training, investigations and research studies have underlined the importance of effective leadership to the achievement of good human relations.

But this is only one side of the coin: there is a growing body of evidence to show that even the best of leaders cannot function successfully in a badly structured situation.

A study made a few years ago in

(Continued on page 44)

Then you, too, should call in **PETER MERCHANT**—the Complete Catering Service—and gain a closer, more efficient control of your canteen than ever before.

Here are some of the resources which Peter Merchant put at your disposal—

1. First-class Catering Executives to put your ideas and wishes into effect
2. The buying power made possible by the operation of 700 canteens
3. Specialists in all branches of catering always available for individual problems (time-and-motion study, for example)
4. Training schools for initial training and refresher courses in canteen management
5. Food research laboratory to check nutritional values and advise on and deal with questions of dietetics, food presentation, hygiene and so on

In addition, all accounting, stock control and general administration are taken from your shoulders; and half-yearly trading results and forward estimates prepared for discussion. In fact, PM offer you a *complete* catering service to enable you to produce the greatest possible efficiency in your canteen.

ARE YOU DIRECTLY RESPONSIBLE FOR THE OPERATION OF A CANTEEN ?

PM

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1 Regent Place, Birmingham 1
Telephone: Central 2212

MANCHESTER
Piccadilly House,
11 Piccadilly, Manchester 1
Telephone: Deansgate 2658

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9 York Street, Sheffield 1
Telephone: Sheffield 29464

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8 Gay Street, Bath, Somerset
Telephone: Bath 2398

BELFAST
Peter Merchant
(Northern Ireland) Ltd.,
4 Donegall Square South, Belfast
Telephone: Belfast 29403

Two and a Half Million Square Meals a Month

by William Lewis

DO you give luncheon vouchers? More and more personnel managers are coming to expect that question some time during the job interview. And in the case of about 8,000 British firms, the interviewer is ready to answer: yes. The attraction which these little slips of paper hold for the prospective employee—the factor which may decide the problem of which job he or she will choose—is obvious. The most popular voucher issued today is worth three shillings. And most employees regard their weekly booklets of vouchers as a boost to their wage packets: an extra 15s. a week—tax free.

To the employer the luncheon voucher is part of his programme of fringe benefits. It is an expense which can be written off against profits for income tax purposes. But more than that, it is one way of ensuring that, even though he provides no catering facilities on the premises, his workers eat a square meal during the lunch hour of every working day.

The growth in influence and popularity of the luncheon voucher has been phenomenal. It started in earnest in 1954, the year that John R. Hack launched his private scheme, designed not so much to offer a service to employers and employees, as to help restaurants and cafés to cut themselves a slice of the many potential workday customers, particularly among office workers in the London area.

In its first year 500 firms took up the scheme—roughly one-tenth of the number using some kind of voucher system. Only four years later, Mr. Hack's scheme, now universally known as Luncheon Vouchers Limited* (he is managing director), supplies vouchers to cover 6,000 firms—three times the total number using private systems.

* Address: Saxone House, 74a Regent Street, London, W.1.

Luncheon Vouchers Limited now provides vouchers for firms all over the country, for factory and office workers alike. It is estimated that some 2½-million vouchers are tendered every month at 4,000 restaurants. Local caterers have shown themselves eager to be listed on the organisation's directory (and to put in their windows the little green, white and black "LV" card which has become so much a part of big city scenery); while the board of directors consists of representatives from the nine catering "giants" (among them: A.B.C., Express Dairy, Fortes, Fuller's, Lyons, Mecca and Quality Inns).

They Must Eat. I stated before that the L.V. scheme offers the employer a simple method of ensuring that his workers eat a good lunch. This is largely due to the strict control which Luncheon Vouchers Limited exercise over the restaurant and cafe owners who co-operate in the scheme (and indirectly over the customer). Their vouchers are issued solely for bona fide meals to be eaten in the restaurant; they must not be exchanged for cigarettes, confectionery, alcohol, groceries, etc.

The organisation's security officers check regularly to see that Inland Revenue rules regarding acceptance of vouchers are strictly observed. Offending caterers are struck from the directory. Incidentally, the vouchers are subject to strict security from the start. They are printed by Thomas De La Rue & Co. Ltd., the people who print your bank notes, and whose staff are also Luncheon Voucher customers.

The Chancellor of the Exchequer has recently been looking closely at the "taxability" of luncheon vouchers. His decision: vouchers worth 3s. and under (you can actually get them in denominations of 1s., 1s. 6d., 2s., 2s. 6d., 3s., 4s., and 5s.) are normally exempt from tax assessment. But any

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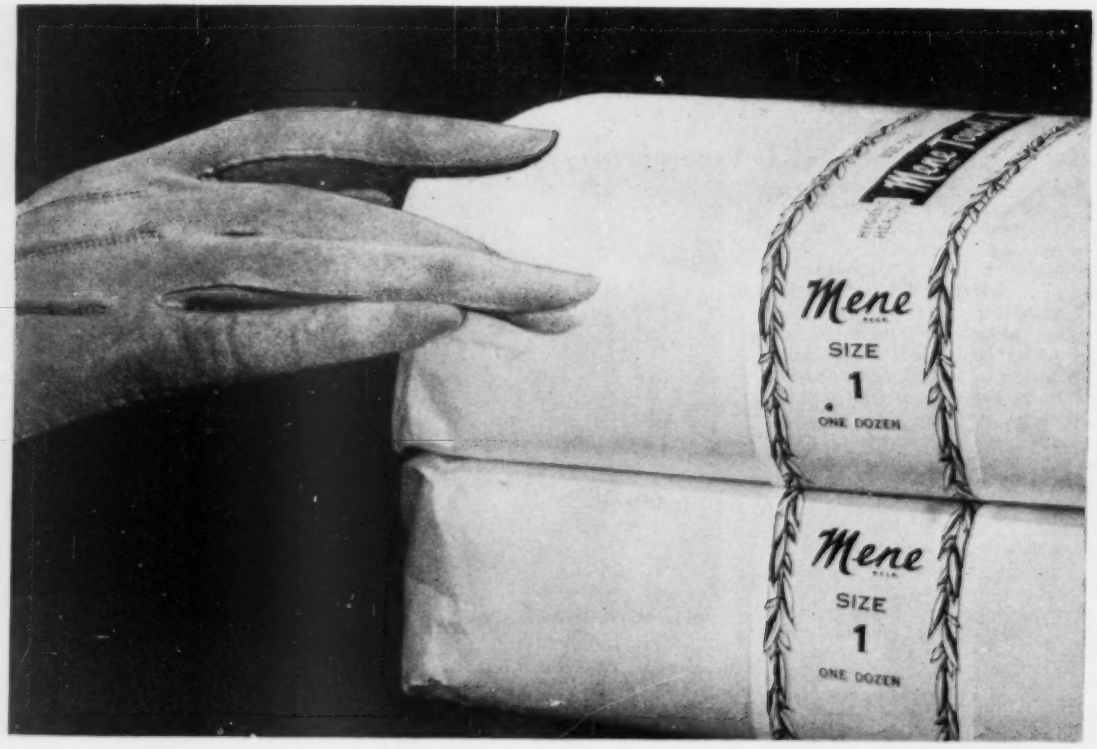
(Continued on page 44)

The quality that's taken for granted



Mene quality and value for money are two things acknowledged by women everywhere. The utmost absorbency, super-soft comfort, economy, complete protection — Mene, over the years, has come to mean all these virtues to millions of women . . . to all *your* customers!

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A Monthly Survey for Personnel Managers

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- **HANDLING**
- **CLEANING**
- **CANTEEN**
- **EFFICIENCY**
- **PACKAGING**

Truvox Industrial Vacuum Cleaner £36 complete with all accessories. (No Purchase Tax.)

Truvox floor maintenance machines make short work—shorter and better work—of cleaning and polishing problems. A full range of equipment (with finger light control and silent, induction motors) for sweeping and polishing, scrubbing, drying and a new industrial vacuum cleaner that really gets under the desks and over the pipes. If floors are your problem, Truvox can help you. Free Advisory and *in situ* Service facilities throughout Gt. Britain.

Write direct to manufacturers for full details of:

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Firms with new products for better, safer working in industry are asked to send details to the Editor

Welfare

COMFORT WITHOUT TEARS

A P.V.C. coated fabric which is tough, hard to tear and light in weight — these are the qualities demanded of present-day industrial waterproof protective clothing. ICI (Hyde) Limited have evolved a material —Hydex—which is claimed to have all these properties, and more.

It is said to be lighter than the conventional rayon or cotton coated fabric, and by using a low twist fabric as a base, the makers claim to have increased its vital tear strength. (Method: by omitting the customary process of twisting the yarn before weaving, a flat ribbon-like yarn is produced; these yarns group together to take the tearing load).

Additional properties claimed for Hydex: completely waterproof, good abrasion resistance and outdoor life; non-absorbent, does not increase in weight when wet; excellent flex life over a wide range of temperatures; resistant to rot and most acids and alkalis; good dimensional stability which facilitates handling of finished article; combines maximum strength with minimum weight.

Jeltek Ltd., working with ICI, have made a number of suits from Hydex, some of which are still undergoing exhaustive trials under active working conditions in the civil engineering, public cleansing and industrial chemical fields. Results, say Jeltek, have been very satisfactory.

The Jeltek Protective General Purpose Suit (illustrated) is cut on generous lines, strongly welded and designed for eye appeal, durability and comfort. The jacket embodies a zip-fastening front with flap protection, closed by five snap fasteners. The Prussian collar has a stand insertion for perfection fitting; the set-in sleeve is pleated into snap-fastened wrist cuffs, and also incorporates under-arm holes for ventilation.

Bocker trousers are fitted with elasticated waist, fly front with snap fastening opening, and legs pleated into ankle cuffs, closed by snap fasteners.

The price of standard garments—long coats, jackets, trousers, etc.—is about twice that of similar garments in conventional P.V.C. coated fabric, but, say Jeltek, the life of a Hydex garment is considered to be many times greater: it is something less than half the weight of a similar garment; and tensile strength is about three times as high.

Sample swatches and garments, in black only, are available on request—14-day delivery.

Jeltek Ltd., Green Lane, Hounslow, Middlesex.

Office Aids

REDUCE THE STRAIN

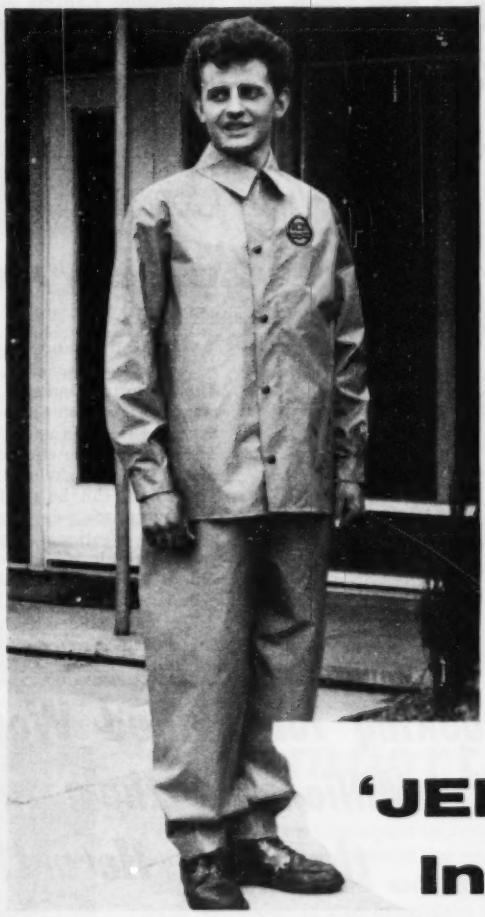
MANY office accidents originate from employees having to move awkward, heavy ledgers from cabinets to their desks. The makers of the Mobinet ledger trolley had troubles similar to this before they produced their mobile aid. The main space takes two standard size ledger trays and has additional pockets for spare cards, statements, etc. The trolley is also equipped with a full-width, removable tray underneath. The fact that the ledgers are presented to the seated employee at the correct height means that there is an all-round reduction of fatigue. Price: £21. There is also a variation of the trolley which includes two built-in ledger trays—£30.

The Mobinet Co. Ltd., Heneage Street, Brick Lane, London, E.1.

Handling

SHAPE FOR SAFETY

LOADS of up to 6 cwt. can be carried in absolute safety on this new all-purpose truck, the "Quinell", say the makers. Designed to handle barrels, drums, casks and all kinds of shaped objects, the truck is claimed to be of extremely robust construction. Wheels are made from solid acid-resisting rubber with hardened ground brushes.



'JELTEK' in Industry

I.C.I. Limited use 'Hydex' nylon protective clothing by Jeltek for their personnel, utilising the 'Jeltek' Photostatic Branding Process for the faithful reproduction of their well-known emblem. Send for latest Price List and Brochure giving details of the full range of 'Jeltek' donkey jackets, duffle coats and P.V.C. waterproofs, and list of approved stockists.

JELTEK
PROTECTIVE CLOTHING

JELTEK LTD.

GREEN LANE, HOUNSLOW, MIDDLESEX. (HOUnslow 7281-7)

No maintenance is required other than an occasional greasing of the wheel spindles. A leading edge on the front of the cradle is tapered to allow easy entry under the object to be lifted, while a grappling hook on the handle shaft can be adjusted up and down its entire length to secure the load. Total length — 4 ft. 6 in. over-all height — 2 ft. 3 in.; price (including delivery) £17 10s.

Cranmer Engineering Ltd., 45 New Cross Rd., London, S.E.14.

Cleaning

JET PERFORMANCE

THE Karcher steam jet cleaner is, say the makers, an easily transportable and compact machine for the removal of grease and the washing, scouring, spraying, cleansing and disinfecting of objects of every kind. It uses a high pressure jet of detergent and steam up to 140 lb. of pressure. This little unit, which was on show at last month's Factory Equipment Exhibition, is claimed to strip mud, paint or grease from machinery, etc. in a matter of seconds.

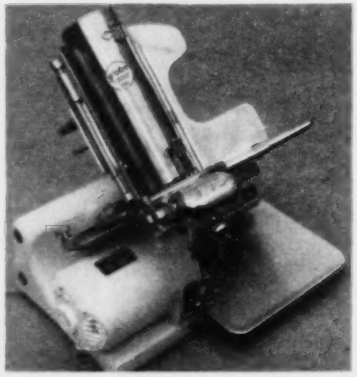
The same service is given by the compact Karcher steam mixing unit for use with an existing supply of steam.

Sermac Sales Ltd., 211-217 Lower Richmond Road, Richmond, Surrey.

Canteen

SLICE OF HYGIENE

ELIMINATION of unhygienic hand-shaping is one of the features claimed for the Globe hamburger attachment. Capable of being fitted to any Globe slicer, it is adjustable to thicknesses up to 1¼ in. and can be used for slicing all kinds of food—hot or cold.



Costing £8, it should appeal to catering managers on economy grounds, especially as it will give uniform portion control.

Gravity Feed Slicing Machine Co. Ltd., 61/63 St. John St., London, E.C.1.

Efficiency Aids

KEY PLAN

MUCH time and effort is wasted in looking for and replacing keys. The Colorcap system is a suggested means of controlling the movement of keys and is based upon visual selection. The basis of the equipment is the key cap, made in eight contrasting colours. The colour can be used for indicating floors, groups, departments or any other organisational requirement. Caps are of durable rubber composition and should fit any key used with lever or cylinder locks.

Key caps hold interchangeable index tabs which correspond with numbered, adjustable hooks. These hooks are

A skilled engineer — drawn from life by Peter Collins

Looking for Skilled Workers? Millions of them read the Daily Herald!

More than 3 million skilled and experienced workers read the Daily Herald—the finest pool of skilled labour in the country. Solve your staffing problems the quick and easy way by phoning Temple Bar 1200 (ext. 453/4/5/8) or Manchester Central 3232 (ext. 75). It's economical too. Have you noted the Herald's recent changes in the series discounts for "Situations Vacant"? They give you the advantage of a reduction of from 5% – 20%.

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Southern editions	17/6 per line
Series discount: 3 insertions in 7 days	14/6 per line
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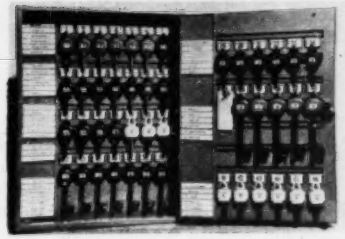
Classified Advertisement Manager, Daily Herald, Acre House, Long Acre, London, W.C.2, or 2/4 Oxford Road, Manchester, 1



clipped at the right distance apart on a board and will take two keys each. When a key is borrowed from the central board, a signature is taken for it on a location card which takes its place on the hook vacated by the key.

Boards are made in two sizes and hold up to 14 keys and 40/50 keys. Prices, including purchase tax: £9 8s. Cabinets for 50, 140 or 280/300 keys cost from £19 8s., complete with all necessary equipment.

Inter-Continental Office Equipment Ltd., Vivian Road, Birmingham, 17.

MAGNETIC DISPOSAL

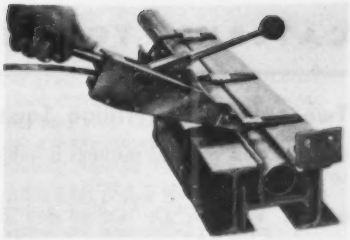
WHENEVER rapid allocation of plant, personnel, vehicles, etc., has to be made, or there is constant reference to their disposition, the Magnet Dispo may offer a simple means of making and seeing the necessary changes. The board is drawn up to show the amount of distribution required, and details (names, code numbers) are entered on small magnetic strips which can then be placed on any part of the planning board as required. Magnet Dispo boards are available in various sizes to meet all applications and the strips can be obtained in different colours as an additional coding.

Archimedes Diehl Machine Co. Ltd., Chandos House, Buckingham Gate, London, S.W.1.

Packaging

EASY TENSION

HEAVY and difficult shapes and sizes can be easily strapped with the new HSD Tensioner, say the makers. The secret: no part of the tool is under the strapping during the process of tensioning, thus no loss of the exerted tension can be suffered on removal of the tool. This device is for use with the maker's HD-SCS sealer and strapping of 1 in. by .036 in.



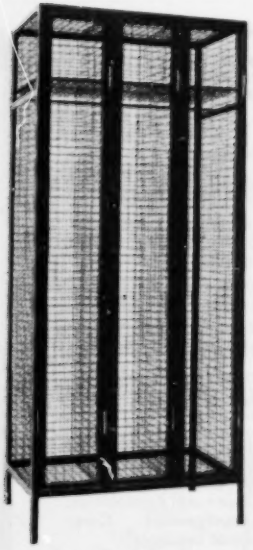
gauge. The manufacturers also claim a sealed joint as strong as 90 per cent of the strapping itself. They state that their equipment is used not only for packaging but also for securing components during a building or fabrication process.

Packers Supply Co. Ltd., Agripta House, Burlington Road, New Malden, Surrey.

New Addresses

The Automatic Canteen Co. Ltd. has moved to larger premises at Automatic House, 5 Bulstrode Street, London, W.1.

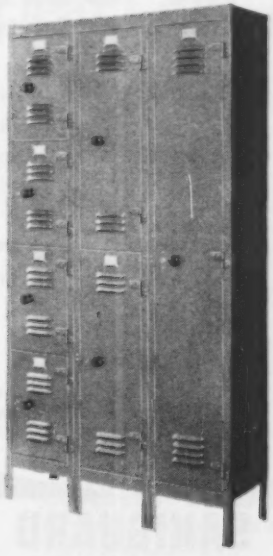
EUK Catering Machinery Ltd. have moved to Latymer Court, Hammersmith, London, W.6.



An Important Amenity

Friction between employees and confusion at going-home time may be avoided by providing separate receptacles for clothes and personal belongings. Such provision is also important in the interest of hygiene. 'Harco' Clothes Lockers provide the answer. They are made in sheet metal or wirework, in nests of up to five in one unit, with short or full-length compartments as required.

Steel lockers are fitted with 6-lever locks which can differ up to 1,600, wirework lockers carry hasps and fasteners for padlocks. Height of both types is 72 in.



'HARCO' CLOTHES LOCKERS

IN WIREWORK OR SHEET METAL

Please ask for Lists Nos. PMT 960 and 1009

G. A. HARVEY & CO. (LONDON) LTD.

Woolwich Road, London, S.E.7 GREenwich 3232 (22 lines)

Harvey

W/SE/3

Two and a Half Million Square Meals a Month

sum in excess of three shillings is liable to be taxed.

How it Works. It would take a little over a week to set the scheme in operation for your company. After the initial order, stating the number of staff to be issued with vouchers, one month's supply (in lieu of a formal contract, this is the minimum order accepted) will be delivered to you, bound into booklets of five for easy handling, together with a directory of listed restaurants in your area.

How much does it cost the employer? One reason given by Mr. Hack for his scheme's success is its remarkably low service charge to employers. This has been cut systematically as the scheme has grown. In 1955 it was 3¼ per cent; today it is down to 1¼ per cent—3d. in the £ on any size order, provided payment is made with the order.

Many firms have developed the luncheon voucher habit because they are too small to provide a staff canteen; others, because they do not wish to be troubled with the organisation that a canteen demands. On Luncheon Voucher Limited's books are firms ranging from the very large to the smallest, and there is no doubt that the movement is growing rapidly. "It just can't help succeeding," declares Mr. Hack, "because it pleases everybody concerned with the scheme." The advantages to caterers and employers have already been discussed. And the employee? Apart from the voucher's added financial attraction, there is an important welfare consideration.

Unlike the staff canteen, this little piece of printed paper gives the worker a wide choice of restaurants away from his place of work.

Morale—Problem of Size

continued from page 35

the output of two British factories, for example, demonstrates the influence of the size of the group on productivity. These two factories were similar in every way—except that one had better employee relationships than the other. In both factories, however, the productivity of the *smaller* groups (with up to about fourteen members) was consistently higher than the productivity of *larger* groups (with about 40—49 members). Deduction: the size of the group was affecting productivity more than good or bad personnel policies.

American experiences are similar. A large U.S. retail firm carried out attitude surveys amongst its staff, and found that morale was directly related to size. Larger units in the company had lower morale than smaller ones.

This is just one small facet of the total organisational picture. There are many other aspects which I want to explore in future issues. Meanwhile I would like to hear what you think about the effect of organisation and structure upon morale and efficiency.

DISCUSSION LEADER.

THE BARRYWALD REGD.

Safety Automatic Incinerator

By the simple depression of a lever the **Barrywald Sanitary Incinerator** automatically destroys sanitary towels, surgical dressings, documents, etc.

It solves major and vital welfare and security problems in factories, offices, institutions, etc.

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- ★ It is simple and cheap to install.
- ★ It is the only incinerator incorporating our patented safety devices.
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PRESTOBAND is a pure surgical cotton gauze bandage, specially treated to make it self-adhesive. It takes no time to apply, and speeds up the healing of minor injuries. It is easy and painless to remove—it comes off cleanly and leaves no mark. No first aid box is complete without PRESTOBAND. For bulk users, PRESTOBAND is supplied in a special 'Hospital Pack', saving about 40% on costs: 12-yard rolls, in three widths—½", 1" and 2". Samples on request. *From your usual supplier, or from the manufacturers, Vernon & Co. Ltd., Preston, Lancs. Tel: Preston Priory 83293*

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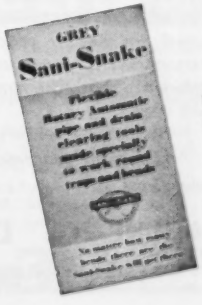

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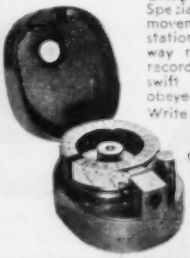

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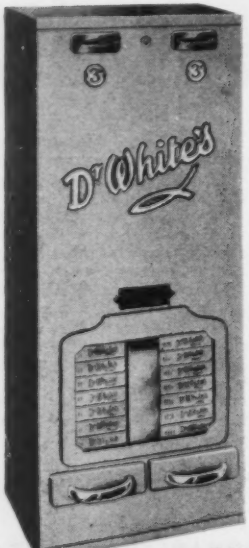

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2 London and Home Counties AGM.
29-July 3 **Ashridge.** Joint course (IWS, IPM) for training officers.

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1–5 Reading skills development course.
8–12 Human relations for training officers.
11–19 Senior executive development course.
15–19 Office organisation and methods.
22–26 Foremanship.
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1–5 Junior executives and management trainees.
9–10 Wage administration and incentives.
16–18 Group leadership seminar.
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4 Manual lifting and handling.
16 Management seminar on human relations.
23 Suggestion schemes.
25 New thinking luncheon.

INSTITUTE OF PERSONNEL MANAGEMENT
8–12 Joint course (BACIE) selection and training of semi-skilled and unskilled operatives.

INSTITUTION OF PRODUCTION ENGINEERS
18–19 **Buxton.** Quality in Industry.

OSMOND TURNER MEAD ASSOCIATES
1–2, 8–9, 18–19 Successful speaking for higher management.
29-July 3 Management communications for higher management.

SUNDRIDGE PARK MANAGEMENT CENTRE (Bromley, Kent)
21-July 10 Measures for management: work study, personnel, production, operational research, etc.

UNIVERSITY OF BIRMINGHAM (Institute for Engineering Production)
8–19 Work study.

URCHFONT MANOR (Devizes, Wilts)
22–27 The human factor in production—for foremen and factory supervisors.
29-July 4 The human factor in the office—office supervisors, accountants, clerks.

May Stop Press

BRITISH COUNCIL FOR REHABILITATION
15 Annual General Meeting and Dame Georgina Butler Memorial lecture: "The place of our Spinal Paraplegic fellowmen in society".

BRITISH INSTITUTE OF MANAGEMENT
12 Communication seminar for senior executives.

Noise and Fatigue

continued from page 27

problem, no hard and fast rules. Every evaluation will depend on the interrelation of abilities of the physician, acoustics engineer and scientist.

Noise exposure is assessed with the aid of sound level meters and analysing equipment. Once the noise has been measured, the *duration of exposure* for each group of people will have to be found. It will then be necessary to know the *total* duration of noise during each day. Next step is to *interpret* the result of noise exposure data. (In this country the present tendency is to accept sound pressure levels of 85 decibels.)

The cure. Ideally, excessive noise should be reduced or enclosed at source—a job for the acoustics engineer. Where this is impractical, another solution lies in alternating personnel, so that no one is exposed to noise for too long a period. A simple method (but a stop-gap solution, in more ways than one) is the use of ear "defenders", or ear plugs made of plastic material or synthetic rubber. As with all other forms of industrial protective clothing and equipment, persuasion and explanation are essential to secure acceptance of ear protection.

Pre-employment audiograms should also be undertaken in any "noisy" industry as a routine function of the health department. As far as the general problem of noise is concerned it cannot be emphasised too strongly that all hearing conservation projects must be regarded as an integral part of the health services rendered by medical and personnel officers.

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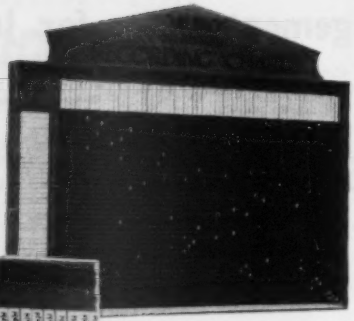

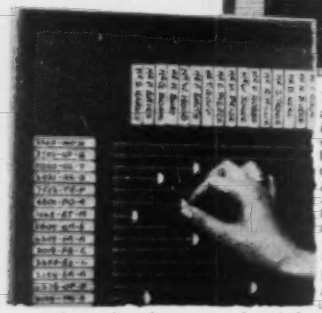

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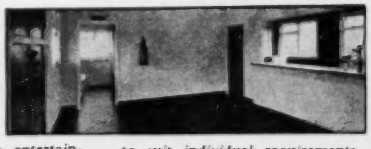

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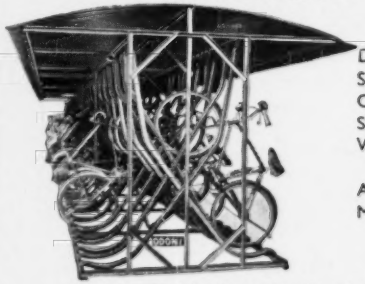

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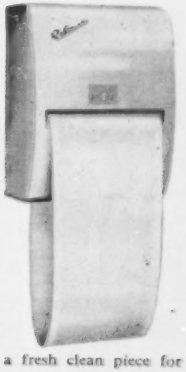

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